MCM CUSTOM AUDIO

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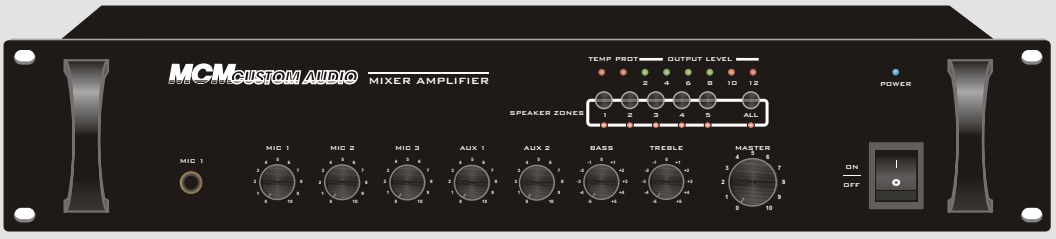
PUBLIC ADDRESS SYSTEM

OPERATION MANUAL

ZONE MIXER AMPLIFIER
MODEL ZPA-60
MODEL ZPA-120



Please follow the instructions in this manual to obtain the optimum results from this unit.
We also recommend that you keep this manual handy for future reference.

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1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety

⚠ **WARNING**	Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.
⚠ **CAUTION**	Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

⚠ WARNING

When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- Be sure to replace the unit's terminal cover after connection completion. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.
- Be sure to ground to the safety ground (earth) terminal to avoid electric shock. Never ground to a gas pipe as a catastrophic disaster may result.
- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down, causing personal injury and/or property damage.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the AC outlet and contact your nearest dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
  - If you detect smoke or a strange smell coming from the unit.
  - If water or any metallic object gets into the unit
  - If the unit falls, or the unit case breaks
  - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
  - If it is malfunctioning (no tone sounds.)
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to your nearest dealer.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.
- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.

⚠ CAUTION

When Installing the Unit

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.
- When moving the unit, be sure to remove its power supply cord from the wall outlet. Moving the unit with the power cord connected to the outlet may cause damage to the power cord, resulting in fire or electric shock. When removing the power cord, be sure to hold its plug to pull.
- Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.

When the Unit is in Use

- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.
- Make sure that the volume control is set to minimum position before power is switched on. Loud noise produced at high volume when power is switched on can impair hearing.
- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Contact your dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.
- If dust accumulates on the power supply plug or in the wall AC outlet, a fire may result. Clean it periodically. In addition, insert the plug in the wall outlet securely.
- Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock.

An all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.

Due to product upgrades, while some of the features and specification in the user manual does not match the actual functions, sorry for any inconvenience and thanks for your kind understanding!

2. GENERAL DESCRIPTION

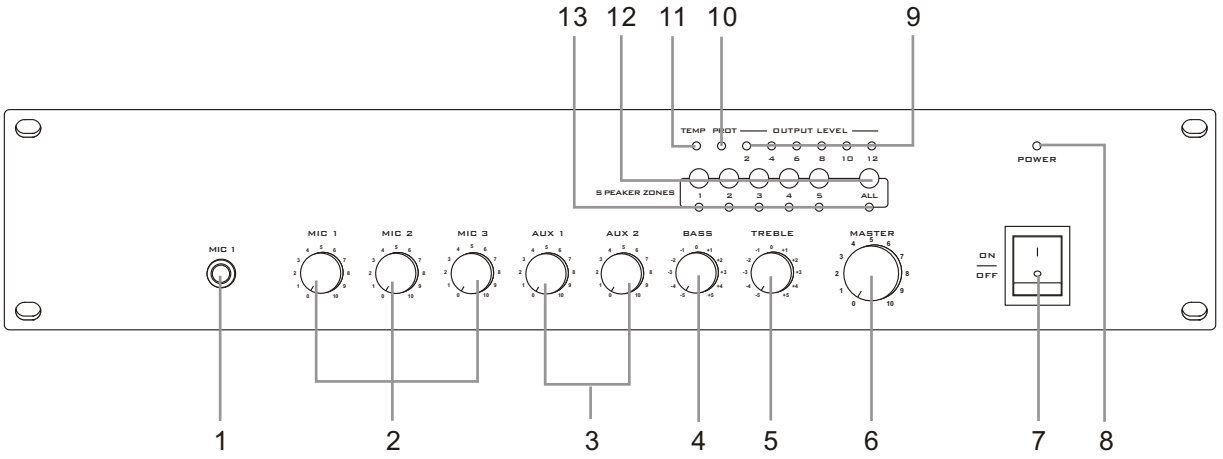
MCM series of public address mixer amplifiers have power ratings from 60 to 120 watts and feature optional balanced MIC inputs, AUX level inputs and EMC (priority) level inputs.

3. FEATURES

60 Watt rated output
100V/70V line transformer-isolated speaker outputs, low impedance 4-16 ohms speaker outputs.
One EMC priority input.
Two aux input and two line input.
Two balanced mic inputs and three unbalanced microphone inputs
EMC input with priority over all other inputs except MIC 1.
AUX, MIC, Bass, Treble and Master volume control.
MIC 1 mute level control.
Power and protection indicators and 6 output level meters.

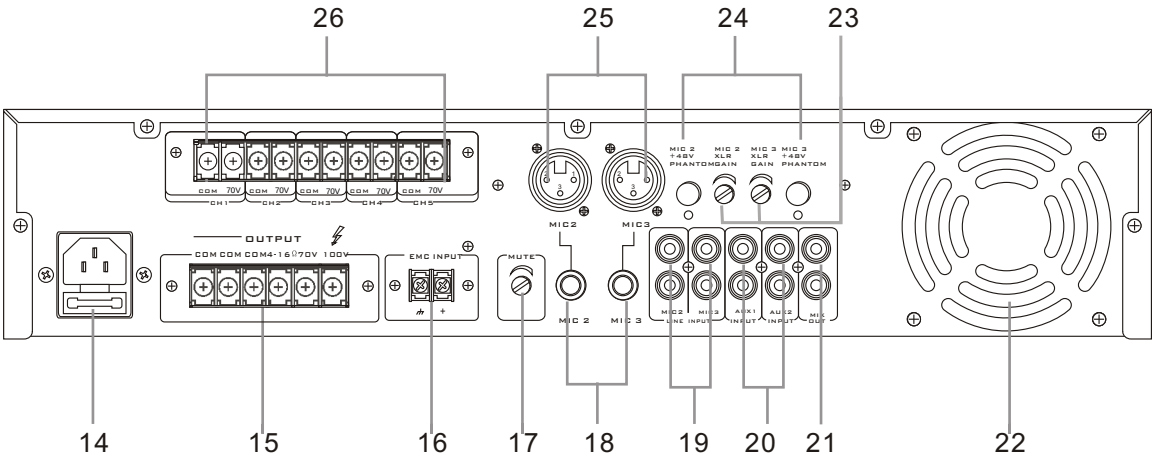
4. NOMENCLATURE AND FUNCTIONS

4.1 FRONT PANEL(2U)


13 12 11 10 9
TEMP PROT OUTPUT LEVEL
2 4 6 8 10 12
POWER
SPEAKER ZONES
1 2 3 4 5 ALL
MIC 1
MIC 1 MIC 2 MIC 3 AUX 1 AUX 2 BASS TREBLE MASTER
ON
OFF
1 2 3 4 5 6 7 8

1. **MIC1**
   MIC1 input 6.3 Microphone jack input
2. **MIC1 \ MIC2 \ MIC3**
   MIC volume control
3. **AUX1 \ AUX2**
   AUX volume control
4. **BASS**
   Adjust bass response. Rotate clockwise to increase bass output and anticlockwise to reduce it.
5. **TREBLE**
   Adjust treble response. Rotate clockwise to increase treble output and anticlockwise toreduce it.
6. **MASTER**
   Master volume controls all size of input signal level.
7. **POWER SWITCH**
   On top of the opening Power
   Press the end, power shut down
8. **POWER**
   The power LED lights when it is turned on; the power LED lights out when it is turn off.
9. **LEVEL INDICATORS**
   Level meters 6 output level indicators
10. **PROT**
    When the machine is in protection status, this indicator will be lit: in normal operation status, the LED is off. If the product is in protection status due to overheating, overload or direct current, the indication LED will be lit while the output relay will be disconnected. (Signal indicator is just used to indicate the use of input music signal. In the protection status, signal indicator is still lit according to the size of input signal.)
11. **TEMP**
    When the machine is overloaded and overheated, the indicator will be lit. when it works normally, this indicator will be off.
12. **SPEAKER ZONE(1~5)**
    Speaker zone(1~5) button control
13. **SPEAKER ZONE(1~5)**
    Speaker zone(1~5) indicator

4.2 REAR PANEL(2U)



14. ~120V 60Hz AC POWER INPUT
(Specific voltage and frequency values to the machine to prevail in kind.)

15. SPEAKER TERMINALS
Connecting the speaker terminal. COM is for public terminal which could be connected with negative terminal and the ground wire. 4～16Ω terminal is used to connect the speaker with impedance 4～16Ω; 70V terminal is used to connect the speaker with 70V; 100V terminal is used to connect the speaker with 100V.

16. EMC
Once there is signal to the emergency alarm signal input, the equipment will play the music signal in this channel as priority except MIC1.

17. MUTE
When turning the mute potentiometer to the right, it is at the maximum mute; whereas it is the minimum.

18. MIC2\MIC3
MIC Unbalanced inputs.

19. MIC2 LINE/MIC3 LINE
MIC2/MIC3 line un-balanced input.

20. AUX1/AUX2
Aux input jack, un-balanced connecting terminal.

21. MIX OUT
Mixed output is used to connect the next equipment.

22. VENTILATION
it is for cooling purpose. Pls keep it open when it is working to avoid overheating.

23. GAIN CONTROL
to adjust the mic gain

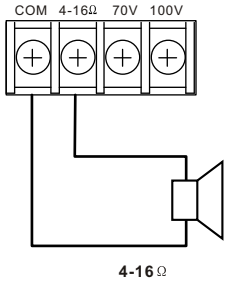
24. PHANTOM POWER SWITCH
The power choice of XLR mic input.

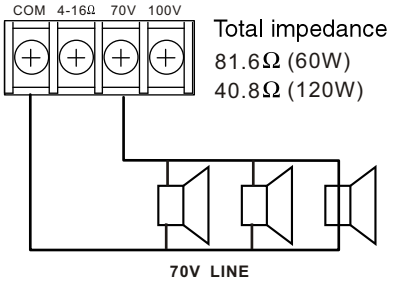
25. MIC2/MIC3
XLR input terminal

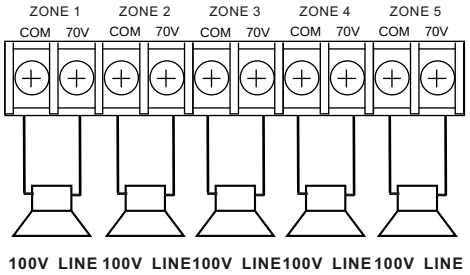
26. (1~5) ZONE OUTPUT TERMINAL
(1-5) zone output terminals, (70V) connecting speaker

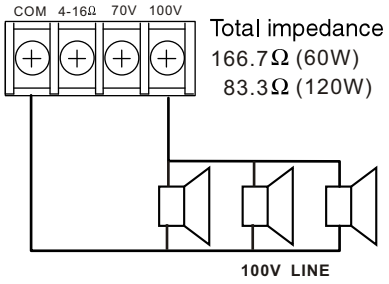
5. CONNECTIONS

5.1 SPEAKER CONNECTIONS









Notes

- Both the 4 – 16 Ω and70V/100 V terminals cannot be used at the same time.
- Impedances indicated in the figures represent the total speaker system (load) impedances.

⚠ WARNING

Be sure to attach the supplied terminal cover after connection completion. Because high voltage is applied to the speaker terminals, never touch these terminals to avoid electric shock.

5.2 XLR CONNECTIONS

Combined XLR (female)/phone jack connectors.

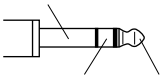
Usable connectors and plugs

- XLR type male connector

Pin 1: Ground Pin 2: Hot
Pin 3: Cold

- Phone plug

Sleeve: Ground



Ring: Cold Tip: Hot

6. MACHINE OPERATION

OPERATION ATTENTION

The four output connectors only can choose two connectors work together. If voltage is 70V/100V, the speakers must be with transformer and make sure the total power wattage of speaker is 15% less than the power wattage of amplifier.

MUTE FUNCTION

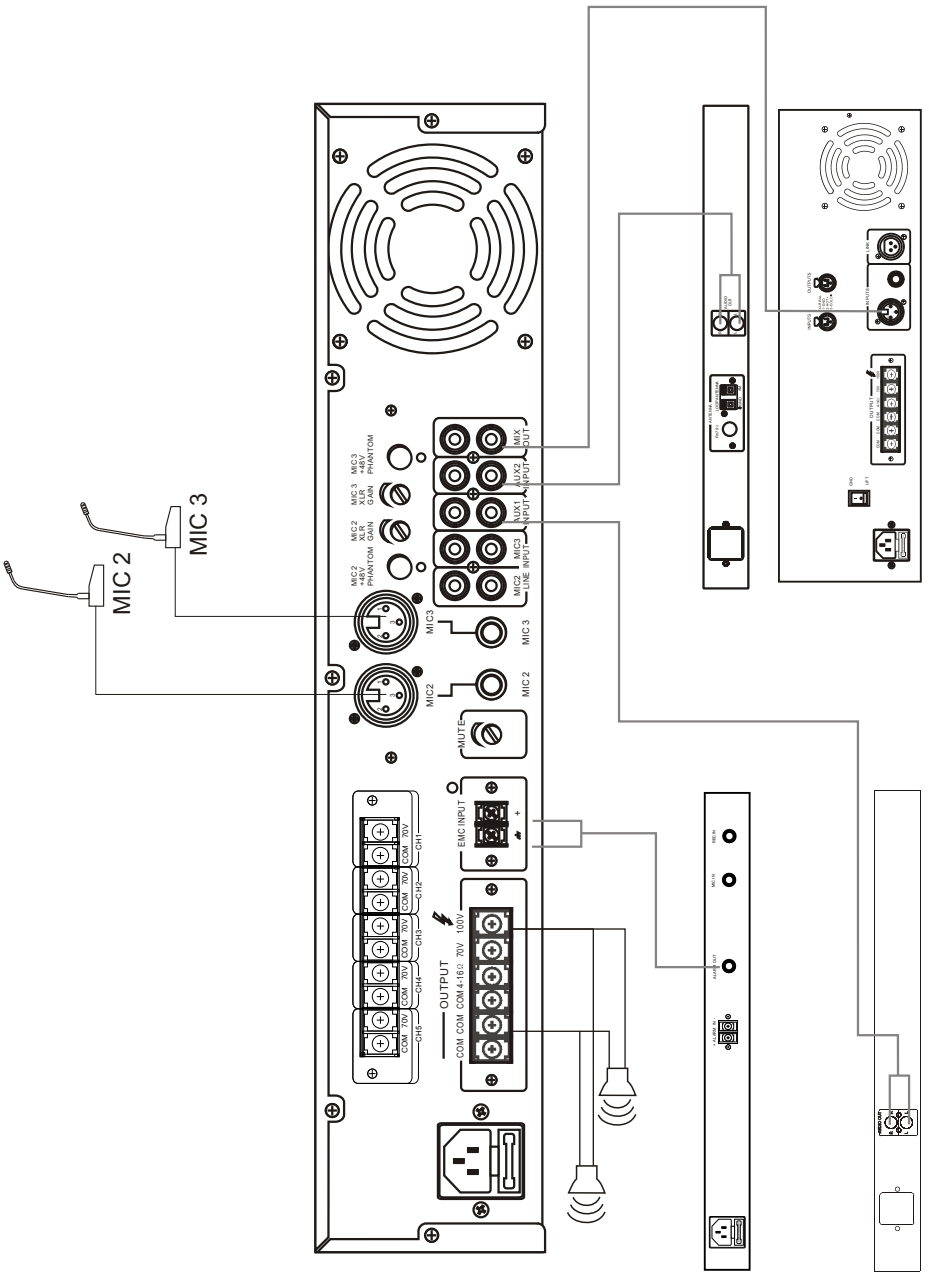
MIC 1 with the first priority over other inputs, the adjustment should be kept within 0-30dB with the mute connector, 30dB is the original setting.

GUIDANCE OF EXCLUDING ERRORS

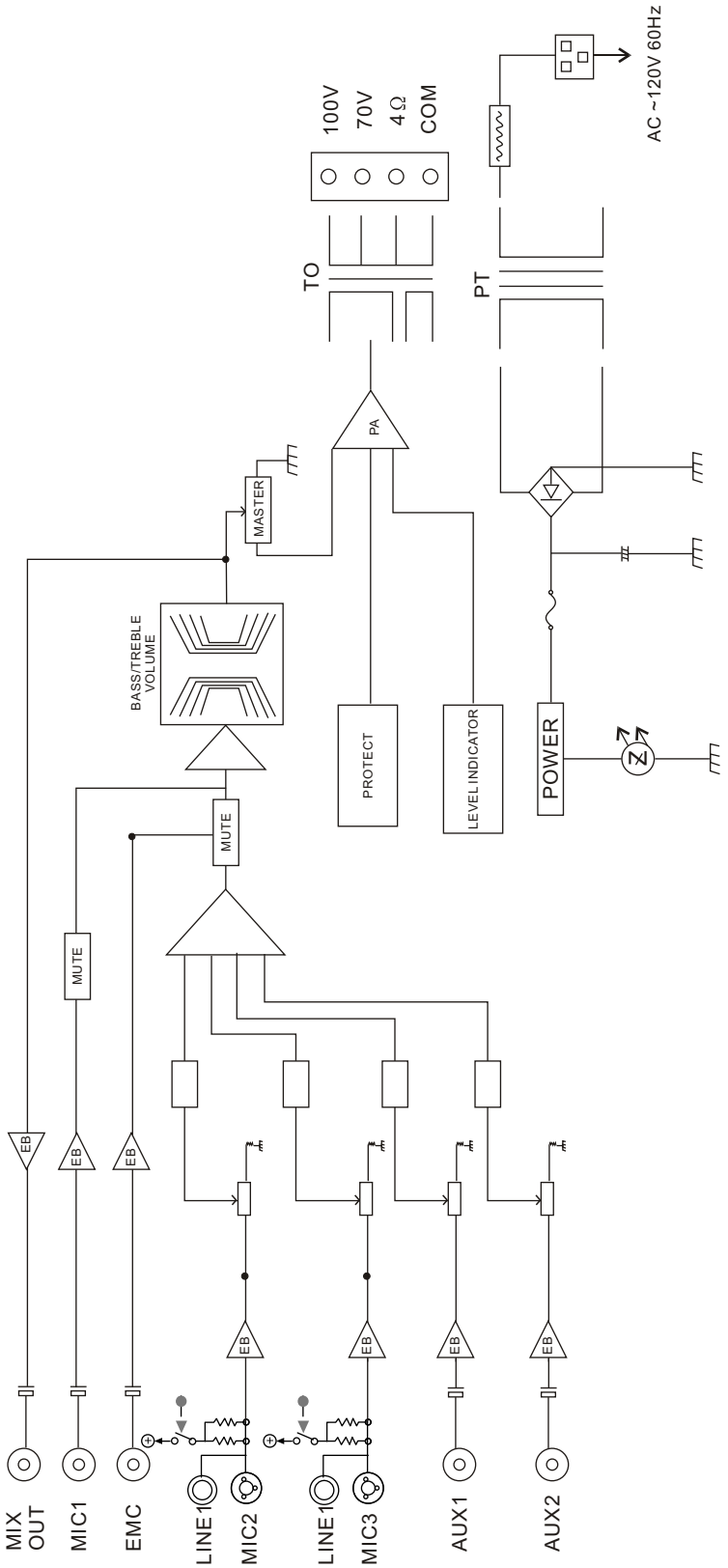
Phenomena	Cause
All the wires are connected well but no voice output	1 No power or wrong plug connection 2 Fuse is burned 3 Volume is town off 4 No input signal
Power on but alarming signal	1 Overloading or short circuit 2 Voltage is not stable, too high or low
No voice output in normal condition	1 Machine is in protection condition in case of high temperature 2 Wrong wire connection

7. APPLICATIONS

REAR PANEL CONNECTIONS



8. BLOCK DIAGRAM

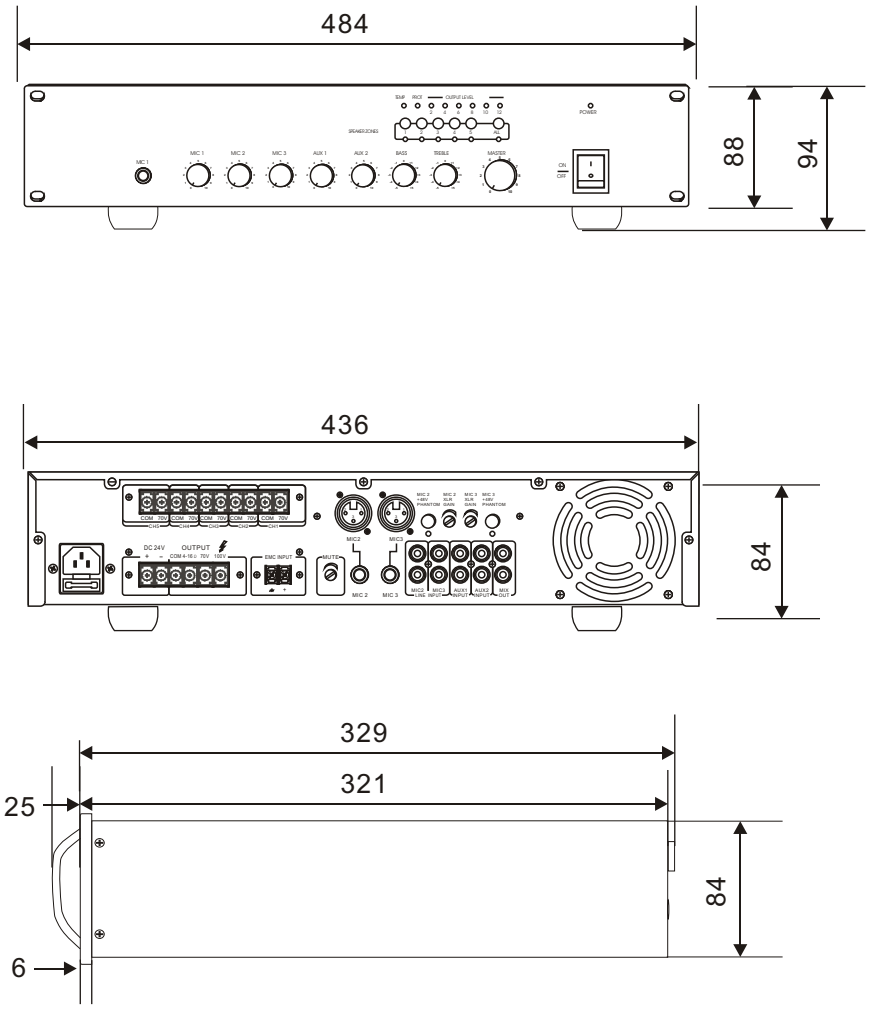


9. SPECIFICATIONS

MIXER AMPLIFIER(2U)		
MODEL	ZPA-60	ZPA-120
RATED POWER OUTPUT	60W	120W
SPEAKER OUTPUTS	4~16Ohms,70V/100V	
INPUT	MIC 1: 5mV/600 Ohms Unbalanced TRS input MIC 2,3: 5mV/600 Ohms Unbalanced TRS/XLR input MIC2,3: LINE:775mV/10KOhms,Unbalanced RCA input AUX 1,2: 350mV/10KOhms, Unbalanced RCA input EMC: 775mV/10KOhms, Unbalanced EMC input	
TONE	Bass: ±10dB at 100Hz Treble: ±10dB at 10KHz	
FREQUENCY RESPONSE	50Hz~16KHz	
S/N RATIO	MIC 1,2,3: 66dB; AUX 1,2: 80dB	
T.H.D	Less than 1% at 1KHz,1/3 rated power	
CROSSTALK	MIC: 80dB; AUX 85dB	
MUTING FUNCTION	MIC1 over other input signals with 0~30dB	
CONTROLS	Individual gain controls, power switch	
INDICATORS	Power LED,LED level meter,protect	
PROTECTION	AC fuse, short-circuit and high temperature	
POWER REQUIREMENTS	~120V 60Hz	
POWER CONSUMPTION	100W	200W
DIMENSION(mm)	484X335X88	
NET WEIGHT	7.1Kg	9.3Kg
GROSS WEIGHT	7.4Kg	9.7Kg

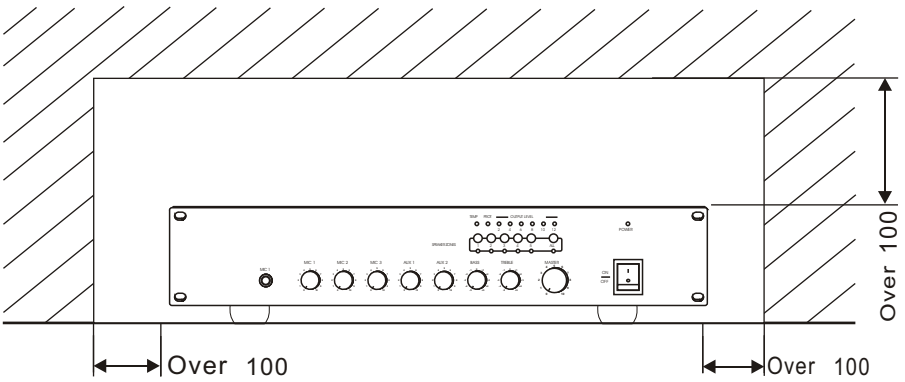
10. DIMENSIONAL DIAGRAM

UNIT :mm



Keep the unit's all sides over 10 cm away from objects that may obstruct air flow to prevent the unit's internal temperature rise.

UNIT :mm



PUBLIC ADDRESS SYSTEM

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